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JAPANESE BEETLE

Adult beetles feeding on fruit and leaves, about one-half natural size. Insert, adult beetle, about twice natural size. Figures below ground represent seasonal history of the Japanese beetle. Left to right, mature grub (late spring); pupa; beetle laying eggs (summer); developing grubs (late summer and fall); all about twice natural size.

(See other side for life history and control)

Bureau of Entomology and Plant Quarantine
United States Department of Agriculture

Picture Sheet No. 4

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JAPANESE BEETLE

(*Popillia japonica* Newman)

Life History

Japanese beetles overwinter as grubs, or larvae, in the soil at depths of 2 to 6 inches. During April they move nearer the surface and feed on the roots of plants. Early in June the grubs stop feeding, pass through a transformation stage, and then become the adult beetles. By early July the beetles are present in numbers, flying about and feeding extensively on the foliage, fruit, and blossoms of many trees and plants. During July and August the females go into the ground and deposit eggs; these hatch into small grubs, which feed on roots of grass and other plants. By fall these larvae are mostly full grown; as winter approaches they move deeper into the soil. Grubs are more abundant in turf than in other situations and cause serious injury to lawns.

Control of the Beetle

Protective or repellent sprays.—The foliage of fruit, shade, and ornamental trees and shrubs can be protected from beetle attack by the use of protective or repellent sprays. These should be applied when the beetles first appear, and additional applications should be made as needed to maintain a protective coating on all portions of the plant subject to attack as long as the beetles are present. The most useful sprays are as follows:

1. Powdered lead arsenate, 10 ounces; wheat flour, 6 ounces; water, 10 gallons (for ornamental trees and shrubs).
2. Powdered lead arsenate, 10 ounces; light-pressed fish oil, 2½ ounces; water, 10 gallons (for ornamental trees and shrubs).
3. Aluminum sulphate, ½ pound; hydrated lime, 2 pounds; water, 10 gallons (for ornamental trees and shrubs, bearing apple, plum, and cherry trees, grapevines, small fruits, and flowering plants).
4. Powdered derris (4 percent rotenone), 5½ ounces; water, 10 gallons (for bearing apple, plum, cherry, and peach trees, bearing grapes and small fruits, and flowering plants).

Contact sprays.—Contact sprays are of value in killing beetles if care is taken to actually hit them with the liquid, but they may not afford satisfactory protection of foliage. The contact sprays include: Spray 4, listed above; commercial fish-oil soap or a good grade of household soap, 3 pounds to 10 gallons of water; and the commercial pyrethrum sprays, at rates recommended by the manufacturers.

Control of Grubs

Lawns can be protected from injury by Japanese beetle grubs for a 5-year period by making one application of lead arsenate at the rate of 10 pounds per 1,000 square feet of lawn. The poison should be mixed with 25 times its volume of moist sand, soil, or other suitable material, and broadcast by hand.

Cautions in the Use of Lead Arsenate

Lead arsenate is poisonous to man and animals, and children or animals should not be allowed access to it. Great care should be taken to avoid getting lead arsenate into the mouth or into cuts or abrasions of the skin. Grass should be washed thoroughly with a hose, after the treatment is applied, to remove any poisonous residue. Domestic animals should not be allowed to feed on treated grass or on or under sprayed trees or shrubbery while any poisonous residue is visible.

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